DOCUMENT RESUME

ED 470 114 IR 021 553

AUTHOR	Sherry, Annette C.
TITLE	AECT Advanced Program Standards and Web-Based Portfolio Development.
PUB DATE	2001-11-00
NOTE	9p.; In: Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Standards; Computer Uses in Education; *Educational Technology; Guidelines; Higher Education; Information Science Education; *Portfolios (Background Materials); Preservice Teacher Education; Student Reaction
IDENTIFIERS	*Association for Educational Communications Tech; *Electronic Portfolios

ABSTRACT

An instructional approach for conceptualizing the five domains of the instructional technology knowledge based defined by the Association for Educational Communications and Technology (AECT) Initial and Advanced Program Guidelines-design, development, utilization, management and assessment-that were required to be integrated into professional electronic portfolios developed by educational technology degree candidates is examined. An in depth look at the process is provided through quantitative and qualitative data about the students' perceptions of the utility of the AECT domains for communicating their professionalism in their portfolios. The process is further examined through the lenses provided by five departmental faculty members' qualitative assessment of the students' portfolios and the students' presentations of these artifacts. Results of this preliminary study indicate that although the five domains tend to be valued for their usefulness in designing to express emerging professionalism, unless required, most would not employ them. Once applied, however, most would retain this framework. Additional suggestions for modifying the portfolio design and development process from initiation in a Web-based course towards the beginning of the students' course of studies through to the final presentation at the conclusion of their program are offered. The increased emphasis on portfolio development throughout education, the growth of Web-based design, and the acceptance of the AECT Guidelines for candidates in both Basic Media Technology in Teacher Education and Advanced Programs in Educational Communications and Technology by the Council for the Accreditation of Teacher Education suggest continued study. Such study is especially warranted in terms of the potential for providing learner guidance relative to this area for students enrolled in educational technology programs. (Contains 12 references.) (Author/AEF)

Reproductions supplied by EDRS are the best that can be made

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

P Harris

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

AECT Advanced Program Standards and Web-Based Portfolio Development

Annette C. Sherry
University of Hawaii at Manoa

ED 470 114

Abstract

An instructional approach for conceptualizing the five domains of the instructional technology knowledge base defined by AECT Initial and Advanced Program Guidelines —design, development, utilization, management and assessment— that were required to be integrated into professional electronic portfolios developed by educational technology degree candidates is examined. An in depth look of the process is provided through quantitative and qualitative data about the students' perceptions of the utility of the AECT domains for communicating their professionalism in their portfolios. The process is further examined through the lenses provided by five departmental faculty members' qualitative assessments of the students' portfolios and the students' presentations of these artifacts. Results of this preliminary study indicate that although the five domains tend to be valued for their usefulness in designing to express emerging professionalism, unless required, most would not employ them. Once applied, however, most would retain this framework. Additional suggestions for modifying the portfolio design and development process from initiation in a web-based course towards the beginning of the students' course of studies through to the final presentation at the conclusion of their program are offered. The increased emphasis on portfolio development throughout education, the growth of web-based design, and the acceptance of the AECT Guidelines for candidates in both Basic Media Technology in Teacher Education and Advanced Programs in Educational Communications and Technology by the Council for the Accreditation of Teacher Education (NCATE) suggest continued study. Such study is especially warranted in terms of the potential for providing learner guidance relative to this area for students enrolled in educational technology programs.

Introduction

The Accreditation Committee of Association for Educational Communications and Technology (AECT) provides Folio Review Guidelines related to educational technology. The guidelines include Basic Guidelines for Media Technology in Teacher Education, as well as for Advanced Programs in Educational Communications and Technology (Association for Educational Communications and Technology, 2000) that are accepted by the National Council for the Accreditation of Teacher Education (NCATE). These guidelines provide a systematic means for internal and external program reviews at colleges and universities throughout the United States.

Standards in Education

In this twenty-first century such an emphasis on standards for education is not uncommon. Examples can be found relative to overall professionalism for teachers (National Board for Professional Teaching Standards, 2001), specific Standards for Technology in Teacher Preparation (International Society for Technology in Education, 2001), and specific content areas, such as standards for mathematics (National Council for the Teachers of Mathematics, n.d.).

Standards in Educational Technology

In the field of educational technology, candidates in both entry level and advanced programs are expected to acquire knowledge and skill within five main areas of the instructional technology knowledge base in domains of: design, development, utilization, management and assessment. Within advanced programs, candidates should demonstrate minimal competencies within each area along with advanced capability in aspects specifically emphasized by the program at their institutions.

Web-Based Delivery of Instruction and Professional Portfolio Development.

Additionally, two other areas that impact educational technology majors are web-based delivery of instruction and professional portfolio development. These students may acquire some of their capabilities through web-based coursework. Educational technology majors, as current and future teachers or trainers, may be expected to teach by means of the World Wide Web (WWW). Experience with this mode of learning is essential for their future distance learners and for their colleagues when they function as consultants. Furthermore, these majors are increasingly expected to demonstrate their knowledge and skills at the completion of their program of studies in electronic portfolios.

Professional Electronic Portfolios

Professional electronic portfolios would appear to be an integral part of the core concepts of post-modernism that Solomon (2000) relates to instructional technology. Professional portfolio development supports: 1) respect for differences and multiple explanations through inherent nonlinear design; 2) construction of personal views by prospective employers and others through text, audio, and visual information about the candidate; 3) critical evaluation as candidates assess themselves at the design phase; and 4) expression, to some extent, of the complexity of the system of educational technology as hypermedia links to design,

IR021553

BEST COPY AVAILABLE

development, utilization, management, and evaluation aspects and to candidates' professionalism and theoretical constructs of the field. Additionally, development of Web-based electronic portfolios is growing at all levels of education (Sanders, 2000).

Web-Based Course, Program of Studies, and Web-Based Production

At a department of educational technology at one Pacific-based university, graduate students participate in a totally Web-based course on newer technologies. Typically, they enroll in this course in their first or second semester in the program. The Web-based delivery mode of this course with its multilevel, hypertext structure and design for interactivity with the learners by synchronous and asynchronous communications, text, audio, and graphic display (Chu 2000) offers a supportive context for core concepts of postmodernism.

Along with earning 39 graduate level credits in required and elective courses, completing 6 credits in prerequisite courses, engaging in both a collaborative and individual practicum, and carrying out a comprehensive master's project, these students were recently required to also produce a professional electronic portfolio during their program of studies. Introduction to this portfolio process was incorporated in the required Web-based course that addresses basic concepts of instructional design and multimedia authoring. Typically, students enroll in this course during their first or second semester of study. In following this newer departmental process for developing this Web-based multimedia perspective about themselves, they continue the process throughout their program. As currently designed, after the initial course, consultation with peers and advisors about their continued development of their portfolios occurs primarily when initiated by the student. During a culminating course, they do have the opportunity to critique each other's work prior to formally presenting their completed portfolios to the faculty.

When this project was first instituted, students studied multimedia design principles (Park and Hannafin, 1993) and addressed general guidelines for content broadly described to encourage individuality of expression. At the conclusion of the course, initial portfolios were assessed in terms of effective design and plan for content coverage. An initial investigation of the students' work indicated that, although they demonstrated competencies in all five domains that define an educational technologist, they did not tend to overtly conceptualize their expertise within this framework. Many communicated their capabilities in terms of courses, which may or may not be meaningful to future employers (Sherry, 2000).

Problem Statement

Although faculty in educational technology programs, particularly those members engaged in the NCATE process, may become adept at describing their programs and their candidates' capabilities in terms of these domains, how might their students begin to conceptualize their learning within this framework? Presenting their competencies in this manner could offer potential employers and their graduate faculty a consistent, professional view of their expertise in these critical areas in relation to standards set by a professional association.

As these findings emerged, departmental faculty members decided to disseminate information about the domains and the framework for the portfolios as the students were developing their initial portfolios in the Web-based course. They followed up with a print-based reminder as the students advanced toward completion of their portfolios prior to graduation. These students earn the required minimum of 39 credits in courses in areas specific to these domains and in specific related aspects of educational technology. As students who are used to developing and analyzing instructional designs in a structured manner, it became essential to evaluate their perceptions of the utility of, and type of integration of, this structured framework for expressing their nascent professionalism.

Methodology

An investigation was, thus, undertaken as a preliminary evaluation study.

Ethical Practice and Participants

This examination, construed as standard educational practice, received the anticipated exempt classification after review by the Institutional Review Board Committee for the Protection of Human Subjects at the university where the study was conducted. In compliance with that process, all participants were fully apprised in writing of the nature of the study, their option for voluntary participation, and their option to participate in having examples of their work displayed as results of the study were disseminated. Of the eight students who completed portfolios prior to graduation, seven agreed to participate in the study. The resulting 88% return rate, represents five of the six females and both of the males; an acceptable rate to provide an initial perspective of the perceived usefulness of the five domains for communicating professionalism as educational technologists through the medium of electronic portfolios.

Data Gathering

Data are based on quantitative and qualitative responses from, and the actual portfolios created by, participants and on qualitative data from their faculty members.

Survey Instrument.

As no published survey was identified that addressed the questions being studied, a written survey was developed. Questions designed to capture demographic data about gender, employment, planned portfolio usage, experience producing portfolios prior to creating these professional portfolios, and awareness of the five domains of an educational technologist were included in the survey. The students' views of the usefulness of the five domains were operationalized in terms of five constructs. The five are

the utility of employing the domains in their portfolios for communicating: 1) the students' knowledge, 2) the students' skills, 3) the range of the students' professionalism, 4) the contribution the domains made to the students' descriptions, and 5) the students' intent to retain the domains in their portfolios after graduation. Their reactions to these five aspects were captured on a ten item survey that has a negatively and positively worded item for each aspect.

The Loyd and Gressard (1986) Computer Attitude Survey consisting of 40 positively and negatively worded items about attitudes toward computers served to guide the construction of these types of questions. For example, the two items about perceptions of skills appear as, "The 5 domains are useful in my electronic portfolio in describing my skills in the field of educational technology" and "My skills can be described better if descriptors other than the five domains are used." A graduate student in the program also offered one-on-one feedback about the survey during its construction.

Students indicated their degree of agreement on a four point Likert-like scale that ranged from "strongly agree" to "strongly disagree". In addition, five open-ended questions were developed to obtain input about the type of examples that students' selected for their portfolios when expressing their performances in each of the five domains of an educational technologist. A final broad, open-ended question sought additional comments.

Artifacts.

The students' electronic portfolios also served as a means of verifying application of the domains.

Faculty Responses.

The five full-time departmental faculty members also provided oral input after viewing the students' formal presentations of their portfolios. The relatively small size of the department (5 full-time faculty members and c. 50 master's degree candidates) did not permit the separation of the investigator as a participant.

Data Analysis

During analysis, an emphasis on the more objective data—the quantitative responses from the students—and validation of the faculty members' judgments expressed as emergent themes about the students' portfolios and presentations were confirmed by all the faculty members. This approach was taken to mitigate to some degree any potential for bias that might occur from the close association between the primary investigator and resulting interpretations of the data. Despite the small numbers of participants, the multiple sources of data collected in this study do have potential to offer an initial view of a process that others may wish to employ to some degree as they engage in similar efforts.

Quantitative Data

Quantitative data were analyzed in terms of frequency distributions. From those analyses the picture that appears shows that among the seven respondents who provided usable data, two were unemployed prior to graduation, four were working as graduate assistants in a technology support capacity, and one was employed in a network security role. Five had had no experience producing any type of portfolio prior to initiating work on their professional electronic portfolios for their master's program. All of the participants indicated that they only become aware of the five domains of an educational technologist as they completed their electronic portfolios.

To more readily express the sentiments of the limited number of participants, the "strongly" and "slightly" agree categories for both agreement and disagreement were collapsed into two categories of agreement and disagreement.

As indicated in Figure 1., the five domains are viewed as contributing to the communication of knowledge and skills as an educational technologist by six of the seven respondents for the former aspect and all of the students for the latter one.

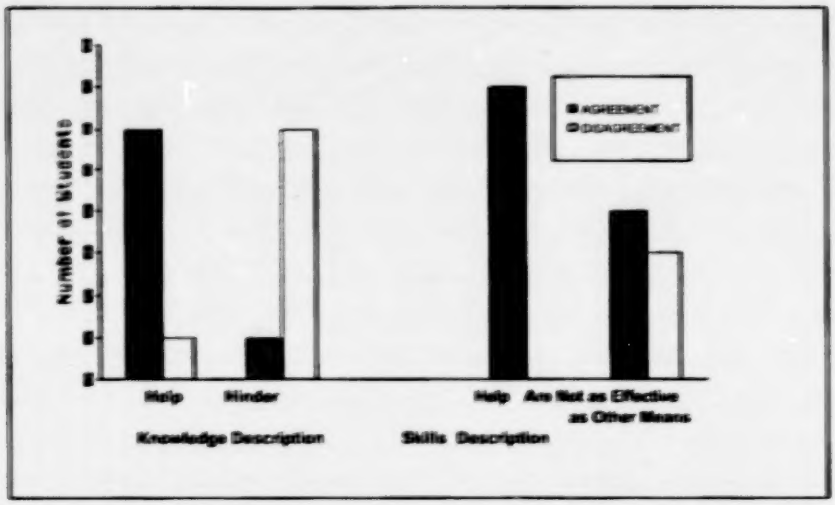

Figure 1. Perceptions of the usefulness of the five domains of an educational technologist when conceptualizing professionalism as an educational technologist in a professional electronic portfolio.

Despite the positive regard for applying the domains to describe skills, negativity predominates (n=4) in regard to the domains being used for skill description rather than some other means.

Figure 2 reflects students' responses to the picture of the domains, and the perceived contribution to professionalism, as well as, to confusion during use. For expressing overall professionalism, all but one of the respondents view the domains as being helpful and not hindering such a depiction. Most (n=5) view the domains as contributing to depicting their range of capabilities. The same number, however, do agree that during production the domains are confusing to use.

BEST COPY AVAILABLE

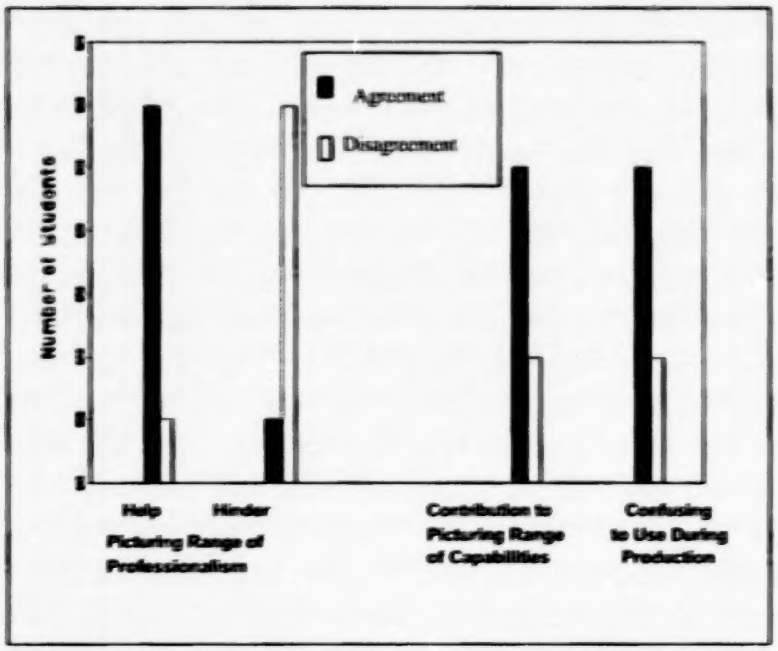

Figure 2. Perceptions of the usefulness of the five domains of an educational technologist when conceptualizing one's range of professionalism and as an educational technologist and of the contribution that the domains made to this picture in a professional electronic portfolio.

That same number of students state they would not employ the domains if they were not required to do so, although five of them do plan to retain usage of the domains (see Figure 3).

BEST COPY AVAILABLE

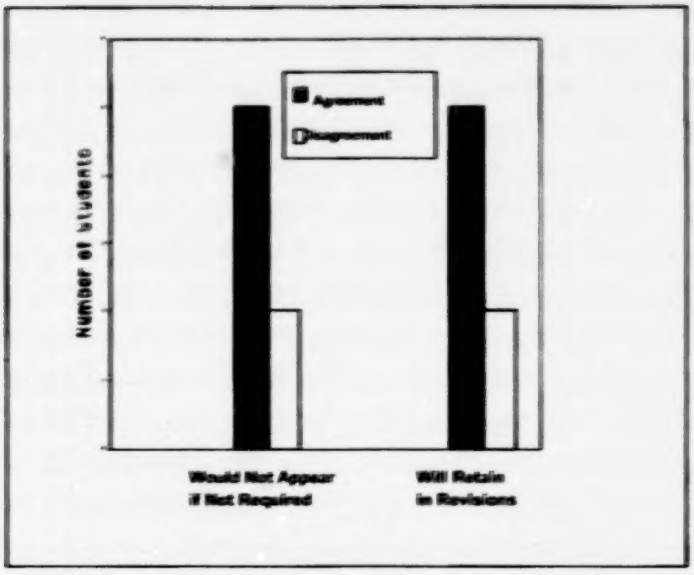

Figure 3. Perceptions of plans to retain the five domains of an educational technologist to communicate professionalism as an educational in a professional electronic portfolio.

Students' Qualitative Data

Six of the seven respondents completed the open-ended section of the survey that related to the manner in which they conceptualized the examples they selected to represent their professionalism for each of the five domains. Half briefly referenced their selections. Each domain, for example, is expressed in the following manner: for design, "Grant from ETEC 600;" for development, "ETEC 603 Designing a paper-based module;" for management, "ETEC 650 assignments;" for utilization, "ETEC 662 Planning a computer lab (networking)"; and for evaluation, "final project" [master's study]. Of those respondents who expressed their choices in this manner, they referred specifically to nine courses, five of which are required courses in the master's degree program.

The other three respondents offered brief narratives about their knowledge and skills, rather than referencing a course alpha and number. For example, in relation to the domain of design, one student wrote, "Print-based instructional module—surfing lessons" This instructional module was designed following the Dick & Carey instructional design model." A similar example, in relation to the domain of management is expressed as,

A visit to UHM video (on Products Page) based on Mintzberg's (1971) principles of mgmt. I was the director of the video. I served as the liaison between the various actors groups for resources & communication. I was resource allocator & the negotiator in that I made sure the project was recorded, edited, & turned in on time.

Analysis of Portfolios

A review of the portfolios themselves by all the departmental faculty members indicates that all the students completed their portfolios, addressing design and content requirements to a degree deemed acceptable for this newer departmental requirement.

Comparison of Faculty Members' and Students' Qualitative Data

Qualitative data, the students' responses to the open-ended questions, their actual portfolios, and the faculty members' oral comments about the portfolios were analyzed in terms of emergent themes.

Emergent themes during the analysis of the open-ended comments offered by both the students and the faculty members indicate that, although there is some convergence in regard to the issues, students' comments relate primarily to learner guidance about the domains. Specifically, they mention the need to provide information about the domains at the beginning of the process with details about the domains as they develop their portfolios. There are suggestions related to the format that the guidance could assume, such as, a brochure about the domains and examples of portfolios that integrate explicit domain-based information.

To some extent the feedback from the faculty members reflects the students' ideas. The faculty members' note the need for the candidates to be clear and overt in explanations about the domains in their electronic portfolios. To achieve such ends and

BEST COPY AVAILABLE

overall professionalism in portfolios, the faculty members cite a need for a more structured ongoing peer and faculty feedback process during the two plus years of design and development.

In terms of professionalism, the faculty members state that such posture needs to be emphasized in the design and selection of content. They explicitly note this situation in terms of the degree of emphasis given to work-related information over personal data; selection of concise exemplars; use of sophisticated design elements, including decisions about selecting appropriate graphics; and increased focus on the candidates' future worth. Formatting is also mentioned with recommendations for the inclusion of alt tags and pdf files to ensure that awareness of ADA and printing concerns are conveyed.

Of particular note is a reminder to address privacy issues in terms of self and others, such as considering the amount of personal information to make readily available on the WWW and obscuring references to specific individuals, or educational sites, that might occur in samples included in the portfolios. They also call for developing a way for the students to communicate the rich content of these portfolios in a reasonable timeframe, while ensuring professionalism during presentation.

Discussion

Despite introducing the concept of analyzing professional knowledge and skills and overall range of professionalism in relation to the five domains of their field toward the completion of the portfolio process, it is encouraging to note the students' overall positive reaction to the utility of that framework. The process of synthesis required of them, rather than analysis, can be a more challenging intellectual skill. This cognitive demand may be reflected to some extent in the students' mixed feelings about the contribution that the domains make in conveying the range of the students' capabilities.

Perceptions of Domains

Although they primarily agreed (n=5) that the domains did contribute to this picture, the same number also noted that during production the domains were confusing to use. Their comments about the need for additional guidance in regard to the domains, particularly their request for brochures and examples from the portfolios of others, offer support for providing additional information for future learners both about the domains themselves and about applying them to interpret and communicate their capabilities.

At first it might appear that the students do not value the domains as descriptors, as the majority of the students (n=5) indicate that they would not employ them unless required to do. Their acknowledgement (n=5), however, that they plan to retain the domains as descriptors during revisions appears to reflect the worth which they apparently are beginning to place on the domains. A review of the final versions of the portfolios at graduation, when minor revisions were made after the formal presentations also supports this contention.

Expanded descriptions provided by three of the students in regard to addressing each of the domains in their portfolios, as opposed to the other students' succinct references to course alpha and numbers, suggest a deeper integration of the concepts by the former. The reason, however, is not evident from data gathered in this study.

Process Issues

Instructional design issues, thus, are the predominant concerns identified by responses to the survey, in the actual portfolios, and in the faculty members' evaluations. Contextual issues related to resources—hardware and software accessibility—did not appear in any comments other than a reminder from the faculty members about ensuring that the required CD-ROM copy of the portfolios continue to be made to ensure that the students' work not be lost in "cyberspace." The absence of concerns about hardware and software where not surprising. As majors in an educational technology program, personal ownership of a computer is expected. Additionally, generous, successful grant funding has resulted in a relatively high-end technology laboratory being available not only for these majors, but for all in the college of education.

Implications

The students do offer perspectives that indicate their awareness of, as well as the usefulness of, incorporating the five domains into their portfolios, as well as a variation in the level of conceptualizing domain usage. As professionals in the field of educational technology, planning for effective transfer of critical learning experiences is an essential part of their learning. The results of this preliminary investigation about graduate level educational technology students' perspectives of engaging in the electronic portfolio process and their depictions of themselves as designers, developers, users, managers, and evaluators in terms of these five domains suggest future directions for faculty members in similar situations.

Incidental information related to candidates' portfolio development offers a glimpse of the potential connection that might result from the students' efforts in designing and developing their portfolios. Based on a recent summary of Kirkpatrick's classic Four-Level Evaluation Model from the late 1950's (2001), at Level One, Reaction, the participating students hold predominantly positive attitudes toward the utility the domain-centered framework provides. At Level Two, Learning, they appear capable of communicating their knowledge and skills in relation to the domains. A slight suggestion of how Level Three, Behavior on the Job, is offered in terms of most students indicating that they plan to retain the domains as descriptors in future revisions of their portfolios. It may be that they are planning ongoing usage in future work situations. It is nearly impossible to determine in any substantive manner insights about such portfolio usage in terms of Kirkpatrick's evaluation Level Four, Results, as it refers to impact on the job. Preliminary, incidental data do, however, offer a very faint preliminary sketch. One student nearing graduation, who produced a portfolio before the requirement to overtly address the domains existed, received two university-level job offers within three days of posting his portfolio on the WWW. This outcome resulted despite his avoidance of posting his

work on a job recruitment site. A recent student, who incorporated the domains in her portfolio and obtained a position as a lecturer at a two-year college, was told after being selected that her portfolio contributed to the decision to hire her.

The mere suggestion of such impact makes continuing efforts in refining the professional electronic portfolio process, particularly for educational technology majors who are expected to communicate their professionalism using newer technologies, essential. It is particularly critical as the portfolio process, in varying formats, gains increasing attention for pre- and in-service educators in all fields (Campbell, Cignetti, Melenyzer, Nettles, & Wyman, Jr., 2001; Sanders, 2000).

Additionally, scaffolding candidates' professional development is an important theme for virtual universities (Collis, 1997). It may well be that an electronic portfolio development process within the WWW environment, one that is continually scrutinized in terms of the process and output can provide such support for educational technology candidates. Future studies conducted by investigators at institutions of higher education in the United States, as well as ones overseas, that offer graduate programs in educational technology would seem warranted to determine the ultimate value of this intended exemplar of professionalism. Given the time and effort that both faculty and students expend on the process it is critical that such studies occur.

References

Association for Educational Communications and Technology (2000). NCATE Professional Standards: Initial and Advanced Programs for Educational Communications and Technology . [Online]. Available: http://www.aect.org

Collis, B. (1997). Pedagogical reengineering: A pedagogical approach to course enrichments and redesign with the WWW. Educational Technology Review, 6(8), 11-15.

Campbell, D.M., Cignetti, P. B., Melenyzer, B. J., Nettles, D. H., & Wyman, Jr., R. M. (2001). How to develop a professional portfolio: A manual for teachers (2nd ed.). Boston: Allyn and Bacon.

International Society for Technology in Education (2001). Standards Project. Nat'l Standards for Tech. In Teacher Prep. [Online]. Available: http://www.iste.org/standards/index.html

Kirkpatrick, D. L. (1960, 1959). [Excerpts from Kirkpatrick's Four-Level Model of Evaluation]. The Journal for the American Society for Training Directors. (From Techniques for evaluating training programs, Training & Development, 1996.) Available: [Online]. http://www.astd.org/CMS/templates/index.html?template_id=1&articleid=20840

Loyd, V., and Gressard, C. P. (1968). Gender and the amount of computer experience of teachers in staff development programs: Effects on computer attitudes and perceptions of the usefulness of computers. Association for Educational Data Systems Journal, 18(4), 301-311.

National Board for Professional Teaching Standards. (2001, November 2). [Online]. Available: http://www.nbpts.org

National Council of Teachers of Mathematics. (n.d.). NCTM Principles & Standards. [Online]. Available: http://www.nctm.org/standards

Park, I., & Hannafin, M. J. (1993). Empirically-based guidelines for the design of interactive multimedia. Educational Technology Research and Development, 41(3), 63-85.

Sanders, M. E. (2000). Web-based portfolios for technology education: A personal case study. Journal of Technology Studies, 26(1) 11-18.

Sherry, A. (2000, October). Designing for Web-Based Interaction: Lessons Learned. Paper presented at the international meeting of the Association for Educational Communications and Technology, Denver, CO.

Solomon, D. L. (2000). Toward a post-modern agenda in instructional technology. Educational Technology Research and Development, 48(4), 5-20.

BEST COPY AVAILABLE

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

[X] This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

[ ] This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").